

AMENDMENTS TO THE CLAIMS

1. (currently amended) An electrosurgical instrument, comprising:

a hand piece configured to receive radio frequency energy from an electrosurgical generator; and

a conductive tip adapted to receive the radio frequency energy from the hand piece, the conductive tip comprising, on at least a portion of the tip, a coating comprising a multi-character material ~~providing a low shear, sacrificial layer to the tip~~ that comprises a copolymer of a hydrophobic monomer, polymer, or material and a hydrophilic monomer, polymer, or material.

32
2. (original) An electrosurgical instrument as recited in claim 1, wherein the coating further comprises a base material interposed between at least a portion of the multi-character material and a surface of the tip.

3. (original) An electrosurgical instrument as recited in claim 2, wherein the coating further includes an etching agent.

4. (original) An electrosurgical instrument as recited in claim 2, wherein the base material forms a continuous coating layer on at least a portion of the tip.

5. (original) An electrosurgical instrument as recited in claim 4, wherein the base material includes one or more pores therein and the multi-character material occupies at least a portion of the pores.

6. (cancelled)

7. (original) An electrosurgical instrument as recited in claim 2, wherein the base material comprises at least one of:

- (i) a fluoropolymer;
- (ii) a silicone;
- (iii) a ceramic;
- (iv) an aromatic hydrocarbon;
- (v) an aromatic fluorocarbon; or
- (vi) a porous metal.

32
cont.

8. (currently amended) An electrosurgical instrument as recited in claim 1, wherein the ~~multi-character material~~ coating further comprises a water-soluble polymer comprising at least one of:

- (i) polyethylene oxide;
- (ii) polyethylene glycol; or
- (iii) a copolymer of ethylene oxide.

9. (currently amended) An electrosurgical instrument as recited in claim 1 [[8]], wherein the ~~water-soluble polymer~~ coating further comprises at least one of a water soluble hetero atom polymer, a water soluble acrylate polymer, a water soluble acrylic acid polymer, a water soluble vinyl polymer, and a water soluble natural polymer.

10. (previously presented) An electrosurgical instrument as recited in claim 1, wherein the coating further includes a radical scavenger to reduce damage to the coating during a process of gamma sterilization.

11. (cancelled)

B2 Cont.
12. (previously presented) An electrosurgical instrument as recited in claim 8, wherein the water-soluble polymer is a carrier that provides a factor on a contact area of a patient's body during the electrosurgical procedure.

13. (original) An electrosurgical instrument as recited in claim 12, wherein the factor includes at least one of:

- (i) an antibiotic factor;
- (ii) a healing factor;
- (iii) an anti-adhesion factor;
- (iv) an anti-tumor factor;
- (v) a tumor necrosis factor; or
- (vi) a clotting factor.

14. (currently amended) An electrosurgical instrument as recited in claim 1 [[8]], wherein the ~~water-soluble polymer coating~~ provides the a low shear, sacrificial layer to the tip.

15. (original) An electrosurgical instrument as recited in claim 1, wherein the tip includes a porous metal.

16. (original) An electrosurgical instrument as recited in claim 1, wherein the multi-character material includes a charged unit.

B2 Cont.
17. (currently amended) A tip adapted for use in performing an electrosurgical procedure, the tip comprising:

a prepared surface; and

a coating applied to at least a portion of the prepared surface, wherein the coating includes a multi-character material providing a low shear, sacrificial layer to the tip, the multi-character material comprising a copolymer of a hydrophobic monomer, polymer, or material and a hydrophilic monomer, polymer, or material.

18. (original) A tip as recited in claim 17, wherein the prepared surface is a substrate that comprises a porous metal.

19. (original) A tip as recited in claim 17, wherein the prepared surface is a substrate that comprises a roughened metal.

20. (original) A tip as recited in claim 17, wherein the prepared surface is a substrate that comprises surgical stainless steel.

21. (cancelled)

22. (original) A tip as recited in claim 17, wherein the coating further comprises a base material.

23. (original) A tip as recited in claim 22, wherein the base material comprises a fluoropolymer.

24. (original) A tip as recited in claim 22, wherein the multi-character material comprises a radical scavenger that reduces damage to the coating during a process of gamma sterilization.

25. (cancelled)

26. (original) A tip as recited in claim 17, wherein the multi-character material comprises a charged unit.

27. (original) A tip as recited in claim 17, wherein the multi-character material comprises a carrier that provides a factor to the contact area of a patient during an electrosurgical procedure.

28. (original) A tip as recited in claim 27, wherein the factor comprises at least one of:

- (i) an antibiotic factor;
- (ii) a healing factor;
- (iii) an anti-adhesion factor;
- (iv) an anti-tumor factor;
- (v) a tumor necrosis factor; or
- (vi) a clotting factor.

82 cont.
29. (currently amended) A method for coating a tip of an electrosurgical instrument, the method comprising:

preparing a surface of an electrosurgical tip to be coated; and

applying a base material coating over the surface, the base material coating comprising one or more pores; and

applying a multi-character material coating layer over the base material coating on the surface such that the multi-character material provides a low shear, sacrificial layer to the tip, wherein the multi-character material is applied by using a process of electrophoresis to draw the multi-character material into at least a portion of the pores, wherein the combination of the multi-character material and the base material coating form a first layer about at least a portion of the tip.

30. (cancelled)

31. (cancelled)

32. (cancelled)

33. (currently amended) A method as recited in claim 29 [[32]], wherein the multi-character material comprises a charged unit.

B2 Cont.
34. (currently amended) A method as recited in claim 29 [[32]], wherein the base material comprises a fluoropolymer.

35. (currently amended) A method as recited in claim 29 [[32]], further comprising applying a coating layer onto the first layer, wherein the coating layer includes a hydrophilic material.

36. (cancelled)

37. (currently amended) A method as recited in claim 29 [[36]], wherein the multi-character material coating layer comprises an ~~amphiphilic~~ amphiphilic material with molecular chains having a hydrophobic characteristic and a hydrophilic characteristic, and wherein the hydrophilic characteristic comprises at least one of:

- (i) polyethylene oxide;
- (ii) polyethylene glycol; or
- (iii) a copolymer of ethylene oxide.

38. (previously presented) A method as recited in claim 37, wherein the hydrophobic characteristic comprises at least one of:

- (i) polypropylene oxide;
- (ii) a fluorocarbon; or
- (iii) a hydrocarbon.

32
cont.
39. (cancelled)

40. (currently amended) A tip for use in performing an electrosurgical procedure, the tip comprising:

a prepared surface; and

a coating over at least a portion of the prepared surface, wherein the coating includes a multi-character material comprising ~~an amphiphilic material with molecular chains having a hydrophilic characteristic and a hydrophobic characteristic~~ a copolymer of a hydrophobic monomer, polymer, or material and a hydrophilic monomer, polymer, or material.

41. (previously presented) A tip as recited in claim 40, further comprising a coating layer over the coating, the coating layer including a hydrophilic material.

42. (cancelled)

43. (currently amended) A method for coating a tip of an electrosurgical instrument, the method comprising:

preparing a surface of an electrosurgical tip to be coated; and

applying a multi-character material coating layer over the surface, the multi-character material coating layer comprising ~~an amphiphilic material with molecular chains having a hydrophilic characteristic and a hydrophobic characteristic~~ a copolymer of a hydrophobic monomer, polymer, or material and a hydrophilic monomer, polymer, or material.

44. (previously presented) A method for coating a tip of an electrosurgical instrument, the method comprising:

preparing a surface of an electrosurgical tip to be coated;

applying a base material coating layer over the surface, the base material coating layer comprising one or more pores; and

applying a multi-character material coating layer over the base material coating layer by using a process of electrophoresis to draw a multi-character material into at least a portion of the pores, wherein the combination of the multi-character material and a base material of the base material coating layer form a first layer about at least a portion of the tip.

45. (previously presented) A method as recited in claim 44, wherein the multi-character material comprises a charged unit.

32
32X,
46. (previously presented) A method as recited in claim 44, wherein the base material comprises a fluoropolymer.

47. (previously presented) A method as recited in claim 44, further comprising applying a coating layer over the first layer, wherein the coating layer includes a hydrophilic material.
